

REMARKS

I. Introduction

Claims 14 to 26 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicant notes with appreciation the acknowledgment of the claim for foreign priority and the indication that all copies of the certified copies of the priority documents have been received from the International Bureau.

II. Information Disclosure Statement

As regards the Information Disclosure Statement, a Supplemental Information Disclosure Statement is submitted herewith again citing the allegedly missing documents.

III. Rejection of Claims 14 and 16 to 19 Under 35 U.S.C. § 102(b)

Claims 14 and 16 to 19 were rejected under 35 U.S.C. § 102(a) as anticipated by U.S. Patent Application Publication No. 2001/0007275 ("Yanagisawa et al."). Yanagisawa et al. do not anticipate these claims for at least the following reasons.

It is "well settled that the burden of establishing a prima facie case of anticipation resides with the [United States] Patent and Trademark Office." Ex parte Skinner, 2 U.S.P.Q.2d 1788, 1788 to 1789 (Bd. Pat. App. & Inter. 1986). To anticipate a claim, each and every element as set forth in the claim must be found in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of Calif., 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). That is, the prior art must describe the elements arranged as required by the claims. In re Bond, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990).

Claim 14 relates to a device for generating chlorine trifluoride. As amended herein without prejudice, claim 14 recites a plasma reactor, plasma generating means, a first gas, a second gas selected to react with the first gas to

form chlorine trifluoride when under the influence of a high-density plasma, gas supply means via which the first gas and the second gas can be supplied to the plasma reactor, these gases reacting with one another under the influence of the high-density plasma in the plasma reactor, forming chlorine trifluoride, and a gas outlet via which the formed chlorine trifluoride can be removed from the plasma reactor. In this regard, claim 14 has been amended to even more clearly recite the structural features of the first and second gases.

Yanagisawa et al., relating to a wafer flattening system, disclose gas bombs 31, 32, and 32, containing SF₆, O₂, and CF₄, respectively, which feed gas to an alumina discharge tube. In this regard, Yanagisawa et al. do not disclose, or even suggest, employing gases that react with one another under the influence of a high-density plasma to form **chlorine trifluoride**.

Since Yanagisawa et al. do not disclose, or even suggest, all of the features recited in claim 14, it is respectfully submitted that Yanagisawa et al. do not anticipate claim 14.

Claims 16 to 19 depend from claim 14 and therefore include all of the features recited in claim 14. It is therefore respectfully submitted that Yanagisawa et al. do not anticipate these dependent claims for at least the same reasons set forth above in support of the patentability of claim 14.

Withdrawal of this rejection is therefore respectfully requested.

IV. Rejection of Claims 14 and 15 Under 35 U.S.C. § 102(e)

Claims 14 and 15 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,783,627 ("Mahawili"). Mahawili does not anticipate these claims for at least the following reasons.

Mahawili, relating to a reactor for processing a semiconductor substrate, discloses injecting gases into a reactor chamber, in various combinations. However, none of these combinations is capable of forming chlorine trifluoride. In this regard Mahawili does not disclose, or even suggest, employing gases that react with one another under the influence of a high-density plasma to form **chlorine trifluoride**.

Since Mahawili does not disclose, or even suggest, all of the features cited in claim 14, it is respectfully submitted that Mahawili does not anticipate claim 14.

Claim 15 depends from claim 14 and therefore includes all of the features recited in claim 14. It is therefore respectfully submitted that Mahawili does not anticipate claim 15 for at least the same reasons set forth above in support of the patentability of claim 14.

V. Rejection of Claims 20, 22, 25, and 26 Under 35 U.S.C. § 103(a)

Claims 20, 22, 25, and 26 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of PCT Publication No. WO 00/51938 ("Bhardwaj et al."), U.S. Patent No. 6,042,654 ("Comita et al."), and U.S. Patent No. 5,047,115 ("Charlet et al."). It is respectfully submitted that the combination of Bhardwaj et al., Comita et al., and Charlet et al. does not render unpatentable any of these claims for at least the following reasons.

Claim 20 relates to a method for generating chlorine trifluoride. Claim 20 recites the steps of generating a high-density plasma in a plasma reactor, and supplying to the plasma reactor a first gas and a second gas, which react with one another under the influence of the high-density plasma in the plasma reactor, forming chlorine trifluoride.

Bhardwaj et al., relating to a chlorotrifluorine gas generator system, disclose a reaction chamber that forms chlorine trifluoride using a thermal reaction. In this regard, the Examiner admits that Bhardwaj et al. do not disclose a high density plasma method for generating chlorine trifluoride. Office Action, page 6.

Comita et al., relating to a method for cleaning a process chamber, disclose providing chlorine gas into a processing chamber, wherein the chlorine gas is thermally decomposed to create chlorine radicals. As an initial matter, Comita et al. teach away from using plasma-generated radicals. See, e.g., col. 6, line 66 to col. 7, line 2. Moreover, the Examiner admits that Comita et al. do not disclose a high density plasma generating method for generating chlorine trifluoride. Office Action, page 7. Indeed, Comita et al. do not disclose, or even suggest, this feature.

Charlet et al., relating to a process for etching by gas plasma, disclose a medium for forming a plasma, wherein the medium comprises at least one non-carbon-containing fluorinating gas, at least one rare gas, at least one non-carbon-containing oxidizing gas, and optionally at least one other gas chosen from nitrogen and chlorine-containing gases. The Office Action admits that Charlet et al. do not

disclose formation of chlorine trifluoride. Indeed, Charlet et al. make no mention whatsoever of chlorine trifluoride. As such, Charlet et al. do not disclose, or even suggest, **high density plasma generating method for generating chlorine trifluoride**.

As indicated above, the combination of Bhardwaj et al., Comita et al., and Charlet et al. does not disclose, or even suggest, all of the features of claim 20. Therefore, Applicants respectfully submit that claim 20 is not rendered unpatentable by the combination of Bhardwaj et al., Comita et al., and Charlet et al.

As for claims 22, 25, and 26, which depend from claim 20 and therefore include all of the features recited in claim 20, it is respectfully submitted that the combination of Bhardwaj et al., Comita et al., and Charlet et al. does not render unpatentable these dependent claims for at least the same reasons set forth above in support of the patentability of claim 20. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988) (any dependent claim that depends from a non-obvious independent claim is non-obvious).

VI. Rejection of Claim 21 Under 35 U.S.C. § 103(a)

Claim 21 was rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Bhardwaj et al., Comita et al., Charlet et al., and U.S. Patent No. 6,274,058 ("Rajagopalan et al."). It is respectfully submitted that the combination of Bhardwaj et al., Comita et al., Charlet et al., and Rajagopalan et al. does not render unpatentable claim 21 for at least the following reasons.

Claim 21 depends from claim 20 and therefore includes all of the features recited in claim 20. As more fully set forth above, the combination of Bhardwaj et al., Comita et al., and Charlet et al. does not disclose, or even suggest, all of the features recited in claim 20. Rajagopalan et al. are not relied upon for disclosing or suggesting the features of claim 20 not disclosed or suggested by the combination of Bhardwaj et al., Comita et al., and Charlet et al. Indeed, Rajagopalan et al. do not disclose, or even suggest, the features of claim 20 not disclosed or suggested by the combination of Bhardwaj et al., Comita et al., and Charlet et al.

In view of the foregoing, it is respectfully submitted that the combination of Bhardwaj et al., Comita et al., Charlet et al., and Rajagopalan et al. does not render unpatentable claim 21. Accordingly, withdrawal of the present rejection is respectfully requested.

VII. Rejection of Claim 23 Under 35 U.S.C. § 103(a)

Claim 23 was rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Bhardwaj et al., Comita et al., Charlet et al., and U.S. Patent No. 6,136,214 ("Mori et al."). It is respectfully submitted that the combination of Bhardwaj et al., Comita et al., Charlet et al., and Mori et al. does not render unpatentable claim 23 for at least the following reasons.

Claim 23 depends from claim 20 and therefore includes all of the features recited in claim 20. As more fully set forth above, the combination of Bhardwaj et al., Comita et al., and Charlet et al. does not disclose, or even suggest, all of the features recited in claim 20. Mori et al. are not relied upon for disclosing or suggesting the features of claim 20 not disclosed or suggested by the combination of Bhardwaj et al., Comita et al., and Charlet et al. Indeed, Mori et al. do not disclose, or even suggest, the features of claim 20 not disclosed or suggested by the combination of Bhardwaj et al., Comita et al., and Charlet et al.

In view of the foregoing, it is respectfully submitted that the combination of Bhardwaj et al., Comita et al., Charlet et al., and Mori et al. does not render unpatentable claim 23. Accordingly, withdrawal of the present rejection is respectfully requested.

VIII. Rejection of Claim 24 Under 35 U.S.C. § 103(a)

Claim 24 was rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Bhardwaj et al., Comita et al., Charlet et al., and U.S. Patent No. 6,953,557 ("Ikeda et al."). It is respectfully submitted that the combination of Bhardwaj et al., Comita et al., Charlet et al., and Ikeda et al. does not render unpatentable claim 24 for at least the following reasons.

Claim 24 depends from claim 20 and therefore includes all of the features recited in claim 20. As more fully set forth above, the combination of Bhardwaj et al., Comita et al., and Charlet et al. does not disclose, or even suggest, all of the features recited in claim 20. Ikeda et al. are not relied upon for disclosing or suggesting the features of claim 20 not disclosed or suggested by the combination of Bhardwaj et al., Comita et al., and Charlet et al. Indeed, Ikeda et al. do not disclose, or even suggest, the features of claim 20 not disclosed or suggested by the combination of Bhardwaj et al., Comita et al., and Charlet et al.

In view of the foregoing, it is respectfully submitted that the combination of Bhardwaj et al., Comita et al., Charlet et al., and Ikeda et al. does not render unpatentable claim 24. Accordingly, withdrawal of the present rejection is respectfully requested.

IX. Conclusion

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

Date:

July 30, 2007

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